## ABSTRACT

A computerized system and related methods of identifying an optimum set of product configurations from a plurality of possible product configurations, wherein each product configuration has a plurality of features and each feature has a plurality of options, includes the steps of representing each of the possible product configurations as an ordered set or array of at least n-dimensions, each dimension of the array representing a predetermined one of the features, identifying a subset of valid product configurations, identifying which valid configurations are captured by other configurations through upgrades, conversions, or acceptance of different options, defining and solving an optimization model to identify the optimum set of valid product configurations based on a desired objective, such as to maximize profit, minimize cost, or maximizing coverage of customer demand, and then presenting the optimum set of valid product configurations that satisfy the desired objective.